

CLAIMS

What is claimed is:

1. An optical alignment system for a table saw, comprising:  
a support device for supporting the optical alignment system with respect to a kerf having a first and a second side, said kerf created in a workpiece by operation of rotating blade included in a table saw;  
at least one optical emitting device mounted in the support device, said at least one optical emitting device for projecting a first optical indicator and a second optical indicator; and  
an alignment device coupled to the at least one optical emitting device, for adjusting the alignment of the projected first and second optical indicators with respect to the kerf,  
wherein the at least one optical emitting device is arranged and configured to project the first and second optical indicators substantially in alignment with the first and second sides of the kerf.
2. The optical alignment system of claim 1, wherein the at least one optical emitting device is a laser.
3. The optical alignment system of claim 1, wherein the at least one optical emitting device is a helium-neon laser.
4. The optical alignment system of claim 1, wherein the first optical indicator and the second optical indicator are lines of light visible to a human.
5. The optical alignment system of claim 1, wherein the first and the second optical indicators are projected adjacent the rotating blade's cutting interface.

6. The optical alignment system of claim 1, wherein two optical emitting devices are included in the optical alignment system.
7. The optical alignment system of claim 6, wherein each of the two optical emitting devices are individually alignable.
8. The optical alignment system of claim 1, further comprising a grating disposed on an end of the at least one optical emitting device including two generally parallel linear apertures therein.
9. The optical alignment system of claim 1, further comprising a quick electrical coupling connected to the at least one emitting device, said electrical coupling for coupling to a table saw's electrical system.

10. A workpiece optical alignment system for a table saw including a rotating blade, comprising:
  - a support for supporting the optical alignment device;
  - a first optical emitting device coupled to the support, said first optical emitting device being configured to project a first optical indicator substantially aligned with a first side of a kerf created in a workpiece by operation of the rotating blade; and
  - a second optical emitting device coupled to the support, said second optical emitting device being configured to project a second optical indicator substantially aligned with a second side of the kerf created in a workpiece by operation of the rotating blade,wherein said first optical indicator and said second optical indicator are projected adjacent a cutting interface of the rotating blade, substantially indicating the first and second sides of the kerf.
11. The workpiece optical alignment system of claim 10, wherein said first and said second optical emitting devices are lasers.
12. The workpiece optical alignment system of claim 10, wherein said first and said second optical emitting devices are helium-neon lasers.
13. The workpiece optical alignment system of claim 10, wherein said first optical indicator and the second optical indicator are lines of light visible to a human.
14. The workpiece optical alignment system of claim 10, wherein said first and said second optical emitting devices are fan laser beam generators.
15. The workpiece optical alignment system of claim 10, wherein the support is a riving knife.

16. The workpiece optical alignment system of claim 10, wherein the support is a splitter.
17. The workpiece optical alignment system of claim 10, further comprising a first mounting assembly disposed in the support, for adjusting the alignment of the first optical emitting device and a second mounting assembly disposed in the support, for adjusting the alignment of the second optical emitting device.
18. The workpiece optical alignment system of claim 17, wherein an individual mounting assembly includes:
  - a barrel mounting coupled to the support;
  - a tabbed sleeve received in the barrel mounting, the sleeve being configured for securing an individual optical emitting device of the first and second optical emitting devices therein;
  - a macro-adjuster, said macro-adjuster being operable to adjust the barrel mounting laterally in the support, with respect to the first and the second sides of the kerf; and
  - a micro-adjuster disposed in the barrel mounting, said micro-adjuster being operable to adjust the tabbed sleeve within the barrel mounting with respect to the first and the second sides of the kerf.
19. The workpiece optical alignment system of claim 10, wherein the support and the rotating blade are configured to simultaneously bevel.
20. The workpiece optical alignment system of claim 10, further comprising a quick electrical coupling connected to said first and said second emitting devices, said electrical coupling for coupling to the table saw's electrical system.

21. A table saw, comprising:
- a support surface with an aperture therethrough, for supporting a workpiece,
  - a beveling cutting device adjustably extending through the support surface aperture, said cutting device for cutting a workpiece, whereby operation of the cutting device in the workpiece results in the formation of a kerf having a first and a second side in the workpiece;
  - a first optical emitting device adjustably configured to project a first optical indicator substantially aligned with the first side of a kerf; and
  - a second optical emitting device adjustably configured to project a second optical indicator substantially aligned with the second side of the kerf,
- wherein the first and the second optical emitting devices are configured so as to bevel with the cutting device, such that said first optical indicator and said second optical indicator are projected to substantially indicate the first and second sides of the kerf.
22. The table saw of claim 21, wherein said first and said second optical emitting devices are lasers.
23. The table saw of claim 21, wherein said first and said second optical emitting devices are helium-neon lasers.
24. The table saw of claim 21, wherein said first optical indicator and said second optical indicator are lines of light visible to a human.
25. The table saw of claim 21, wherein said first and said second optical emitting device are fan laser beam generators.

26. The table saw of claim 21, further comprising a support for mounting the first and the second optical emitting devices, said support being configured to bevel with the cutting device.
27. The table saw of claim 26, wherein the support is at least one of a splitter and a riving knife.
28. The table saw of claim 26, further comprising a first mounting assembly disposed in the support, for adjusting the alignment of the first optical emitting device and a second mounting assembly disposed in the support, for adjusting the alignment of the second optical emitting device.
29. The table saw of claim 28, wherein an individual mounting assembly includes:
  - a barrel mounting coupled to the support;
  - a tabbed sleeve received in the barrel mounting, the sleeve being configured for securing an individual optical emitting device of the first and second optical emitting devices therein;
  - a macro-adjuster, said macro-adjuster being operable to adjust the barrel mounting laterally in the support, with respect to the first and the second sides of the kerf; and
  - a micro-adjuster disposed in the barrel mounting, said micro-adjuster being operable to adjust the tabbed sleeve within the barrel mounting with respect to the first and the second sides of the kerf.

30. A workpiece optical alignment system for a table saw, comprising:  
means for projecting a first optical indicator substantially aligned with a first side of a  
kerf, created in a workpiece by operation of a table saw blade, and a second  
optical indicator substantially aligned with a second side of the kerf;  
means for aligning the projecting means with respect to the kerf.
31. The workpiece optical alignment system of claim 30, wherein said projecting  
means is a laser.
32. The workpiece optical alignment system of claim 30, wherein said projecting  
means is helium-neon laser.
33. The workpiece optical alignment system of claim 30, wherein said first optical  
indicator and said second optical indicator are lines of light visible to a human.
34. The workpiece optical alignment system of claim 30, further comprising means  
for quick electrical connection of the projecting means with a table saw electrical  
system.